



**Delaware AgriScience**



Delaware  
is the ideal location  
for a 21<sup>st</sup> century  
global headquarters



#1

**Lower Business Costs;** (2015 Michigan Entrepreneurship Score Card)

**Lower Unit Labor Costs;** (2015 Michigan Entrepreneurship Score Card)

**Best Legal Environment for Business since 2002;** (U.S. Chamber of Commerce, 2015)

**Manufacturing Capital Investment Growth;** (2015 Michigan Entrepreneurship Score Card)

**Energy Reliability;** (2015 Michigan Entrepreneurship Score Card)

**Clean Energy Patents Granted;** (2015 U.S. Clean Tech Leadership Index)

**Most tax-friendly state;** (Kiplinger, September 2015)

**Internet Speed;** (2015 Michigan Entrepreneurship Score Card)

#2

**Overall Ranking for U.S. State New Economy Score;** (2014 New Economy Index; Kauffman Foundation)

**Academic R&D Growth;** (Enterprising States 2015, U.S. Chamber of Commerce)

#3

**Patents;** (2014 New Economy Index; Kauffman Foundation)

**Productivity and Labor Supply;** (2015 Michigan Entrepreneurship Score Card)


# **Delaware has been ranked second among states best-prepared for the new economy by *The Information Technology and Innovation Foundation***

#2

The 2014 *State New Economy Index* builds on six prior State New Economy Indexes published in 1999, 2002, 2007, 2008, 2010 and 2012. Overall, the report uses 25 indicators broken up into five key areas that best capture what is new about the New Economy:

1. Knowledge Jobs
2. Globalization
3. Economic Dynamism
4. The Digital Economy
5. Innovation Capacity

**Delaware's job growth has outpaced that  
of all of our neighbors since January 2010**



**13% 50,000**  
Jobs

**#3**

in the nation  
for PhD's per capita

**Delaware's economic strength  
is the quantity and quality of labor  
available in the State**

Source: National Center for Education Statistics

# Education

World-class research programs in agricultural disciplines and related disciplines such as chemistry, engineering, biology, genetics and business management provide support with research and business challenges, while sustaining the pipeline of talented, well-trained graduates at all degree levels.





The **University of Delaware** and **Delaware State University** are partners in the **Delaware Cooperative Extension**, focusing on agriculture and natural resources, family and consumer sciences, and 4-H and youth development.

## University of Delaware

- World-class research faculty
- Programs in agriculture, chemistry, engineering, biology, genetics and business management
- College of Agriculture & Natural Resources offer programs relevant to Crop Protection including entomology and pest control, soil health, and chemical discovery
- Research flourishes at UD's Agricultural Experiment Station, a 212-acre farm in Newark and on its substation in Georgetown

## Delaware State University

- Agribusiness degree provides outstanding preparation for a broad range of careers in the agricultural industry



## **Rutgers University School of Environmental and Biological Sciences**

College of Environmental and Biological Sciences is within an hour and a half drive of Wilmington, Delaware  
The New Jersey Agricultural Experiment Station gives students access to laboratories, farms, business incubators and marine stations

## **University of Maryland**

College of Agriculture and Natural Resources is within a two-hour drive of Wilmington, Delaware  
Comprehensive academic programs covering various topics in agriculture, environmental technology, food science, and natural resources



## **Delaware Technical Community College**

Agribusiness Management Associate Degree Program focused on principles of production, management, and marketing of an agricultural business

### **There are 220 colleges and universities within a 100-mile radius, including:**

American University

La Salle University

Salisbury University

Delaware Valley University

Loyola University

Swarthmore College

Drexel University

Penn State

University of Pennsylvania

Georgetown University

Princeton University

University of the Sciences

Johns Hopkins University

Rowan University

Villanova University

... and 327 miles away is  
**Breen Student Union at Grove City College**



# Delaware's Educational Agricultural Programs

**Bioinformatics**

**Entomology**

**Agricultural & Resource Economics**

**Soil Sciences**

Soil Chemistry

Soil Fertility

Soil Physics

Soil Formation and Biochemistry

**Plant Sciences**

Plant Molecular Biology

Plant Pathology

Plant Tissue Culture





## Educational Research Happening in Delaware

**Includes: Soil & water science, plant molecular genetics & genomics, applied agricultural sciences, and food microbiology**

- North East Cyberinfrastructure Consortium project to sequence the little skate, *Leucoraja erinacea*, genome
- Genome-wide association studies in chicken using integrative genomics and systems biology approach
- Research in post-transcriptional mechanisms that regulate the expression of genes in higher plants
- Entomologists are addressing pests that attack corn and soybeans
- Variety of projects on nematicide discovery
- Study of diseases and pests that impact lima bean production
- Strategies to understand and mitigate heavy metals in crops
- Designer fertilizers to optimize bioavailability with crop growth
- Soil Evaluation Laboratory is conducting cutting-edge research to address soil-related environmental issues, crop production challenges, and waste disposal concerns
- Research conducted to understand resistance mechanisms exhibited by plants upon inoculation with a rust fungal pathogen called *Uromyces appendiculatus*
- Studying the physiological stress responses and the underlying biochemical and molecular mechanisms in crop plants to drought and salinity



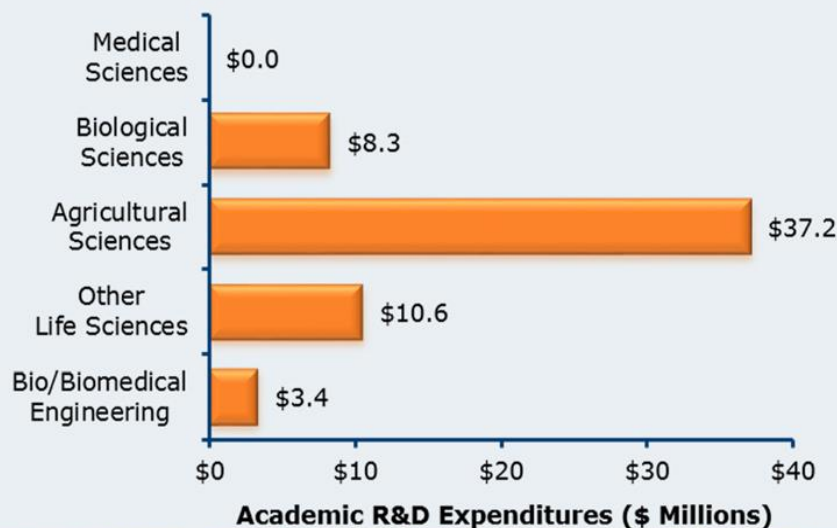
# Environmental and Natural Resources Science Pathway

The Environmental and Natural Resources Science Pathway of study includes two courses that were developed through the national Curriculum for Agricultural Science Education (CASE) and concludes with the Advanced Placement Environmental Science course. The CASE curriculum is supported by the nation's largest agricultural companies, including but not limited to DOW, General Mills, MetLife, Mosaic, John Deere, TransCanada, Cargill, as well as DuPont and Pioneer. Many graduates accept jobs in Delaware supporting our numerous bioscience companies.

# Bioscience Research in Delaware

The region's educational institutions prepare Delaware's students for future employment in AgriScience and also its complement bioscience. The 2014 Battelle/BIO State Bioscience Jobs, Investments and Innovation reports shows, "Delaware has a diverse and highly specialized concentration in bioscience employment. The industry is 63 percent more concentrated in the state relative to the national average. Our State has 1,150 bioscience-related patents since 2009. Delaware's total bioscience industry establishments increased by 45.3% from 2007-2012 as compared to an increase of 11.4% in the United States."

**Bioscience Academic R&D Expenditures,  
FY 2012**



**NIH Awards, 2009–2013**





# Life Sciences Thrive in Delaware

- Uniquely positioned in the center of one of our nation's **most successful life science corridors**
- **Leads the nation** in academic bioscience R & D growth with a growth rate from 2009 through 2012 of 46.0%
- **Ranks 3<sup>rd</sup>** in the nation in bioscience related patent distributions
- **9<sup>th</sup> highest growth** rate in NIH funding, FY 2013
- One of only a few states with a **specialization in all four bioscience subsections**: agriculture, feedstock and chemicals; drugs and pharmaceuticals; medical devices and equipment; and research and testing
- With its roots in the research and development standards established set by the original DuPont Company more than 200 years ago, Delaware is currently home to life science firms ranging from **incubator start-ups to multinational giants** with a supportive environment for creativity and innovation

## **A Sampling of Delaware's Growing Life Sciences Industry**

ABS  
ACRO Biosystems  
ACT Solutions Corp  
Adesis, Inc.  
Agilent Technologies  
Amgen  
ANP Tech  
AstraZeneca  
CD Diagnostics  
CM-Tec  
DeNovix  
DuPont  
GenPro Genome Profiling, LLC  
Hologic  
Incyte

Johnson & Johnson Innovation  
Merck  
Midi Labs  
Modern Water  
Nemours Biomedical Research  
Neuracon Biotech  
NORAMCO, Inc.  
Pharma Tech  
Romer Labs  
SDIX LLC, An OriGene Company  
Siemens  
SPC  
SPI Pharma  
Supercritical Fluid Technologies, Inc.  
ThermoFisher Scientific

# Perdue AgriBusiness

**Delaware's agriculture industry continues to grow:**

- November 2015, Perdue AgriBusiness announced it will build new corporate offices in Delmar, Delaware
- Perdue is an exclusive distributor for DuPont seeds in State of Delaware

**Inherent qualities of our region provide opportunities for rigorous evaluations of new products and crop varieties.**



<b>Corn</b>	<b>518,000 acres</b>
<b>Soybeans</b>	<b>551,100 acres</b>
<b>Wheat</b>	<b>318,000 acres</b>
<b>Vegetables and fruit</b>	<b>80,000 acres</b>

# Delaware Biotechnology Institute

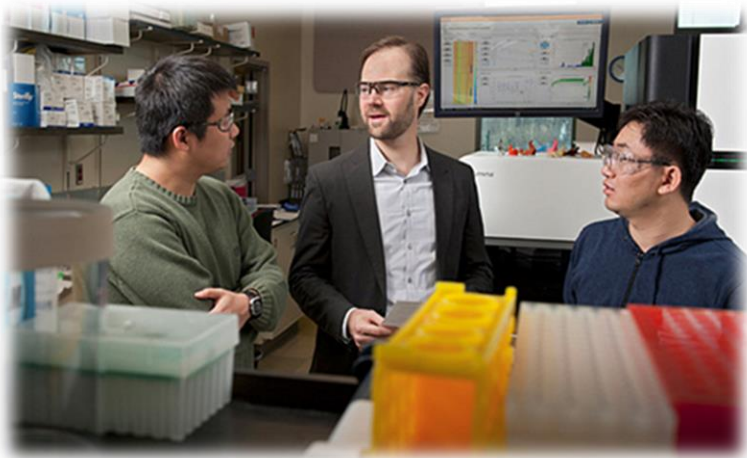


The Delaware Biotechnology Institute (DBI), which collaborates with Delaware's other academic and research organizations, has been recognized internationally for its world-leading expertise and work in agriculture. DBI is home to a number of cutting-edge instrumentation facilities which supports the local bioscience industry — from startups to multinationals.

Partners:



# Delaware Biotechnology Institute



- **Center for Advanced Technology** within the institute supports and grows Delaware's economy and bioscience community by fostering innovative applied research collaborations between Delaware businesses and academic institutions
- Uses **molecular and cellular methods** to address some of the most important agricultural problems
- Emphasis on the application of the **most advanced molecular sequencing technologies**, as well as breakthrough methods to visualize cells, widely regarded for knowledge of how genes are expressed and how the gene expression is controlled by plant cells
- Work in plants is also directly leading to exciting new applications in **understanding human diseases** as well
- Current research focuses on post-transcriptional mechanisms that **regulate the expression of genes** in higher plants

# Delaware has a dedicated federal delegation

• GMO • TSCA • TPA • RFS





# Delaware Competes Act

**Recently, the Delaware Competes Act was introduced and passed by the House of Representatives in less than one week. The Act incentivizes companies to create Delaware jobs and invest in Delaware property by changing the way income is apportioned to Delaware for purposes of the corporate income tax. The Act also eases business tax compliance for Delaware employers.**



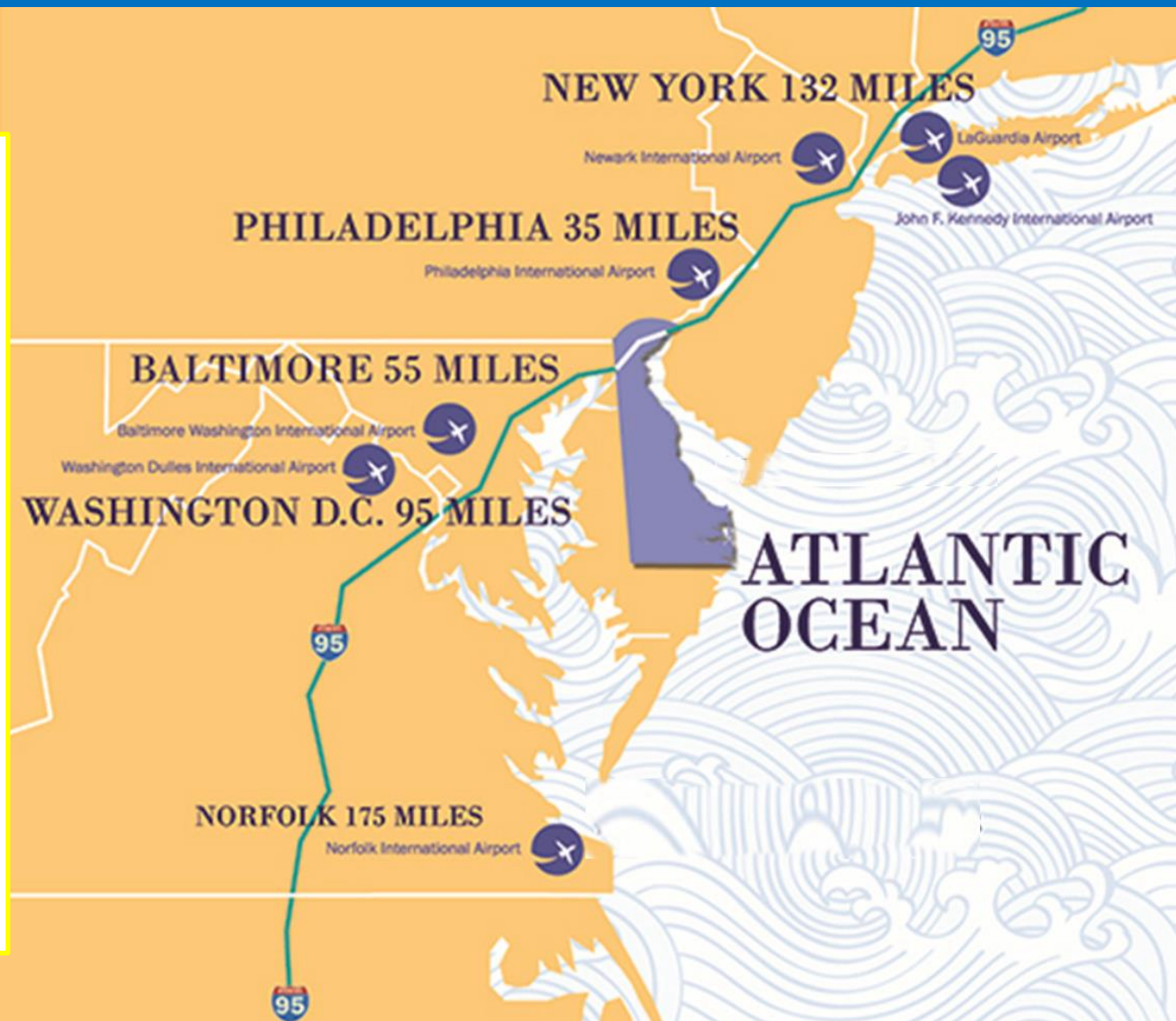
## Attract new business and encourage the expansion of existing operations

### Key tax features include:

- No State or local general sales tax
- No personal property or inventory taxes
- Real property taxes are among the lowest in the country
- Property tax relief for new construction & improvements of existing property
- Exemption of certain investment & holding companies from corporate income tax
- Adherence of the State tax structure to the federal definition of corporate net income so that companies may take full advantage of any federal tax law change such as, more rapid depreciation of newly purchased assets
- Port of Wilmington foreign trade zone allows the deferment of import taxes
- Public Utility Tax rebates of 50% on increased consumption for qualifying industries, and a reduced rate for manufacturers & agricultural processors

## Strategic location

is another of the State's key strengths. Delaware is in the center of the Northeast megalopolis from Boston, Massachusetts to Richmond, Virginia, benefiting from an enormous concentration of modern, efficient transportation options and infrastructure.





Philadelphia International Airport — **less than 25 minutes from Wilmington** —  
has **OVER 520** national and international flights each day, with **129 nonstop** destinations

There are four international airports within approximately 2 hours of the Chestnut Run Headquarters — Philadelphia International, Newark Liberty International, Washington Dulles International, and Baltimore-Washington International.

Nearest Direct Flight	Philadelphia to Brussels, Belgium	Philadelphia to Frankfurt, Germany	Newark to Sao Paulo, Brazil	Newark to Beijing, China
Total Travel Time from Wilmington	7 hours, 48 minutes	8 hours, 7 minutes	11 hours, 12 minutes	15 hours, 7 minutes

**New Castle Airport (ILG)**, Delaware's largest airport (excluding the Dover Air Force Base), operates as a Class-IV-certified FAA facility. The all-weather, CAT 3 facility has three major runways, ten taxiways and several aircraft parking ramps. **Located just five miles south of Wilmington**, the airport provides private operations for numerous major corporations, charter operators and individual owners.



The crop protection team, including many research fellows, has **conducted award-winning research in Delaware** and **developed the strongest and most productive pipeline** in the Global Crop Protection industry.



New blockbuster  
billion dollar revenue products  
such as Rynaxypyr<sup>®</sup> and Cyazypyr<sup>®</sup>  
were developed in Delaware

# Stine Haskell Research Center



In the center, the nearly-completed new 134,000 square-foot research facility, including two high-tech automated greenhouses, is premium space to locate the existing Crop Protection business with room for broad expansion.

# Existing Infrastructure

**Chestnut Run Plaza**



**Experimental Station**



DuPont's existing infrastructure in Delaware includes its headquarters in the Chestnut Run Plaza and the Experimental Station research and development facility. Both provide the ideal location for the science and business management required to be competitive in the agriculture and food industry. These industries are already an integral part of our educational community providing for an outstanding workforce pipeline.

# Delaware

*Endless Discoveries™*

Delaware is the ideal place to do business, but employers also want to be situated in an area with a **great quality of life** – an easy commute, arts and activities, and a healthy environment. **Delaware is that location.**

Imagine miles of **pristine beaches** and friendly, fun coastal towns. See yourself taking a **tax-free shopping** spree at Delaware beach boutiques and galleries, then stepping out for an evening of cutting-edge culinary adventure, followed by a quiet **walk along the surf**.



# Delaware AgriScience



We strongly believe that Delaware is the best place for the AgriScience business and we are prepared to customize incentives to demonstrate our commitment to DowDuPont and the AgriScience industry. We look forward to continuing our partnership.